2001h0*47218001

FIG. 1

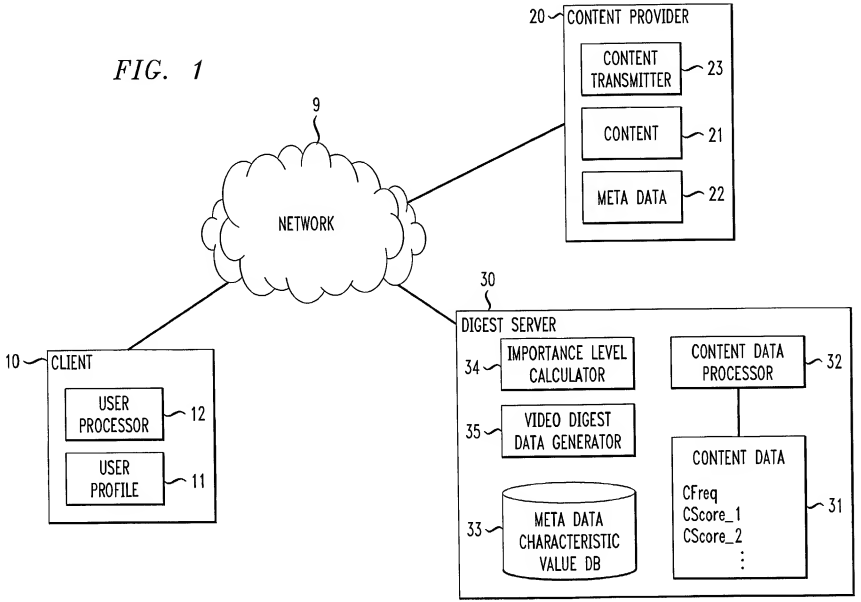

FIG. 2

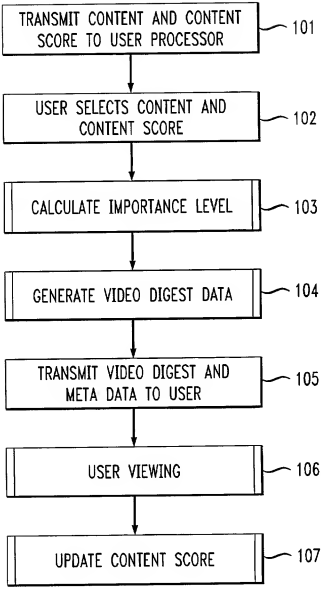

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FIG. 3

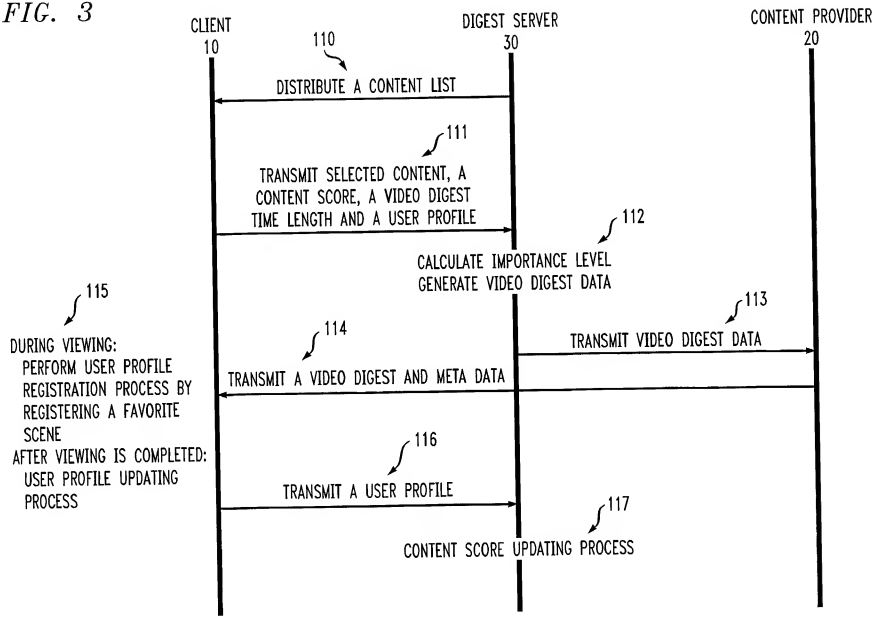
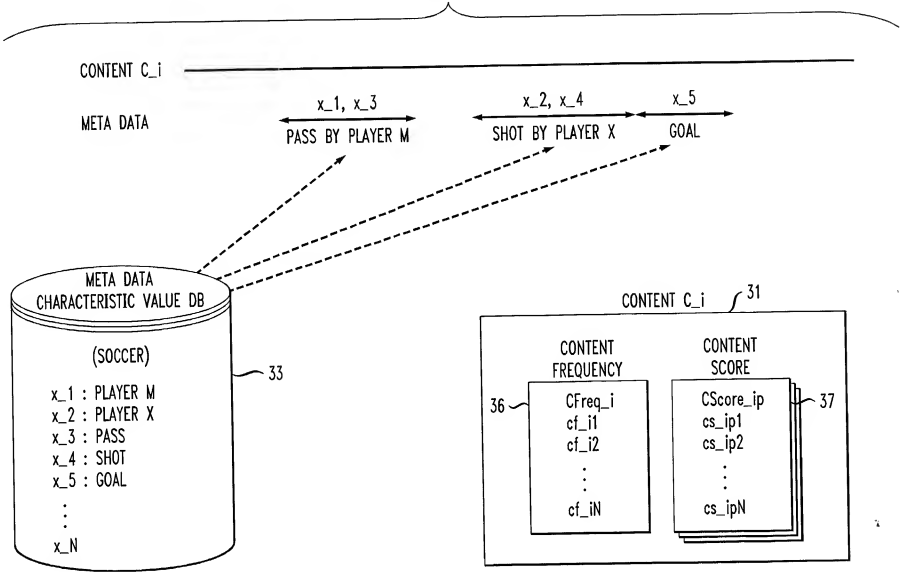

CLIENT
10
DIGEST SERVER
30
CONTENT PROVIDER
20
110
DISTRIBUTE A CONTENT LIST
111
TRANSMIT SELECTED CONTENT, A CONTENT SCORE, A VIDEO DIGEST TIME LENGTH AND A USER PROFILE
112
CALCULATE IMPORTANCE LEVEL
GENERATE VIDEO DIGEST DATA
113
TRANSMIT VIDEO DIGEST DATA
114
TRANSMIT A VIDEO DIGEST AND META DATA
115
DURING VIEWING:
PERFORM USER PROFILE REGISTRATION PROCESS BY REGISTERING A FAVORITE SCENE
AFTER VIEWING IS COMPLETED:
USER PROFILE UPDATING PROCESS
116
TRANSMIT A USER PROFILE
117
CONTENT SCORE UPDATING PROCESS

FIG. 4


CONTENT C_i
META DATA
x_1, x_3
PASS BY PLAYER M
x_2, x_4
SHOT BY PLAYER X
x_5
GOAL
META DATA
CHARACTERISTIC VALUE DB
(SOCCER)
x_1 : PLAYER M
x_2 : PLAYER X
x_3 : PASS
x_4 : SHOT
x_5 : GOAL
x_N
33
CONTENT C_i
31
CONTENT
FREQUENCY
CONTENT
SCORE
36
CFreq_i
cf_i1
cf_i2
cf_iN
CScore_ip
cs_ip1
cs_ip2
cs_ipN
37

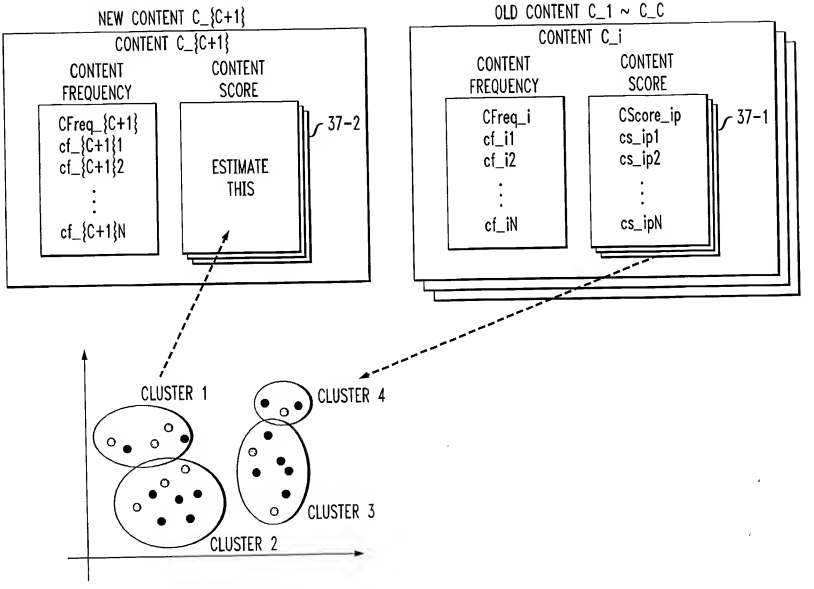

NEW CONTENT C_{C+1}
CONTENT C_{C+1}
CONTENT FREQUENCY
CONTENT SCORE
CFreq_{C+1}
cf_{C+1}1
cf_{C+1}2
cf_{C+1}N
ESTIMATE THIS
37-2
OLD CONTENT C_1 ~ C_C
CONTENT C_i
CONTENT FREQUENCY
CONTENT SCORE
CFreq_i
cf_i1
cf_i2
cf_iN
CScore_ip
cs_ip1
cs_ip2
cs_ipN
37-1
CLUSTER 1
CLUSTER 2
CLUSTER 3
CLUSTER 4

FIG. 5

FIG. 6

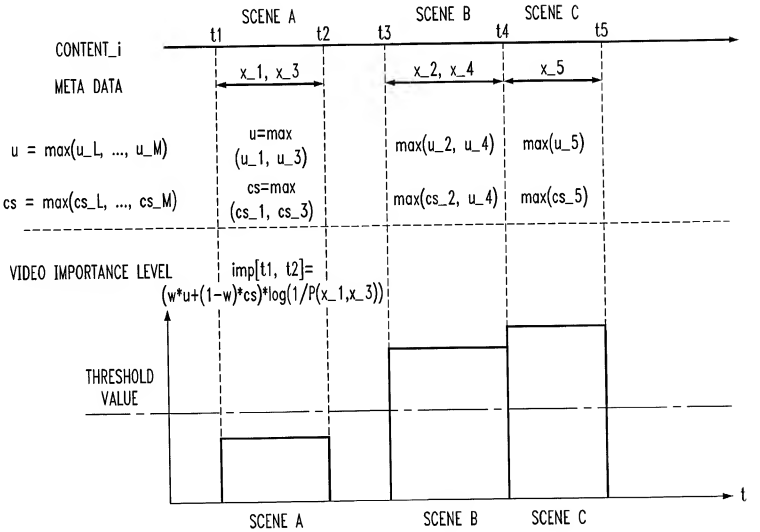

SCENE A
SCENE B
SCENE C
t1
t2
t3
t4
t5
CONTENT_i
META DATA
x_1, x_3
x_2, x_4
x_5
u = max(u_L, ..., u_M)
u=max (u_1, u_3)
max(u_2, u_4)
max(u_5)
cs = max(cs_L, ..., cs_M)
cs=max (cs_1, cs_3)
max(cs_2, u_4)
max(cs_5)
VIDEO IMPORTANCE LEVEL
imp[t1, t2]= (w*u+(1-w)*cs)*log(1/P(x_1,x_3))
THRESHOLD VALUE
t
SCENE A
SCENE B
SCENE C

FIG. 7

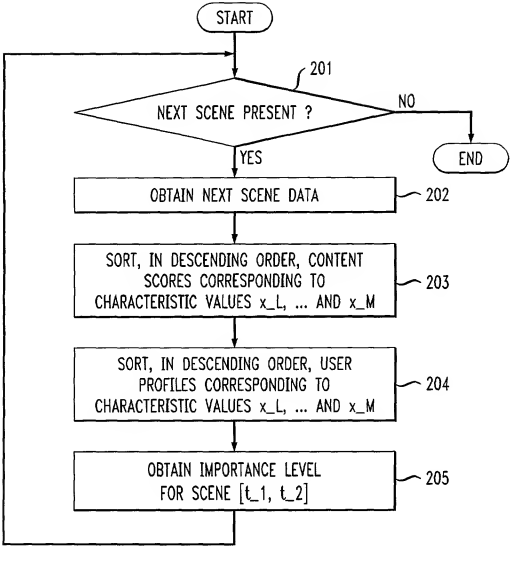

START
201
NEXT SCENE PRESENT ?
NO
END
YES
OBTAIN NEXT SCENE DATA
202
SORT, IN DESCENDING ORDER, CONTENT SCORES CORRESPONDING TO CHARACTERISTIC VALUES x_L, ... AND x_M
203
SORT, IN DESCENDING ORDER, USER PROFILES CORRESPONDING TO CHARACTERISTIC VALUES x_L, ... AND x_M
204
OBTAIN IMPORTANCE LEVEL FOR SCENE [t_1, t_2]
205

FIG. 8

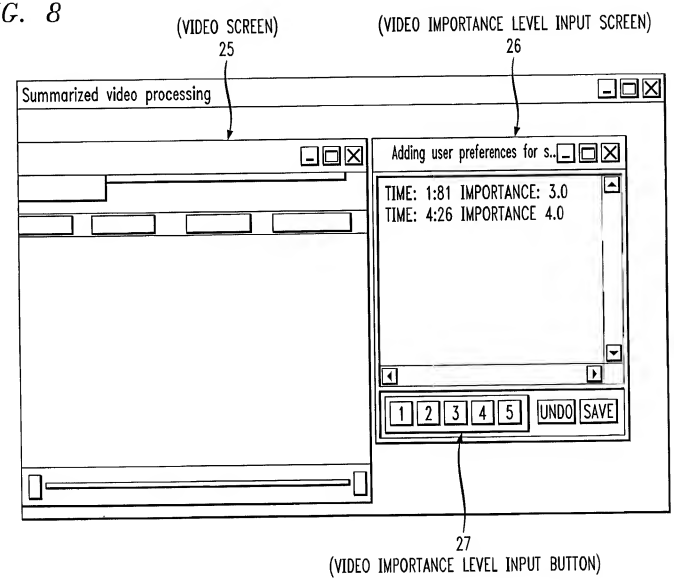

(VIDEO SCREEN)
25
(VIDEO IMPORTANCE LEVEL INPUT SCREEN)
26
Summarized video processing
Adding user preferences for s...
TIME: 1:81 IMPORTANCE: 3.0
TIME: 4:26 IMPORTANCE 4.0
1
2
3
4
5
UNDO
SAVE
27
(VIDEO IMPORTANCE LEVEL INPUT BUTTON)

FIG. 9

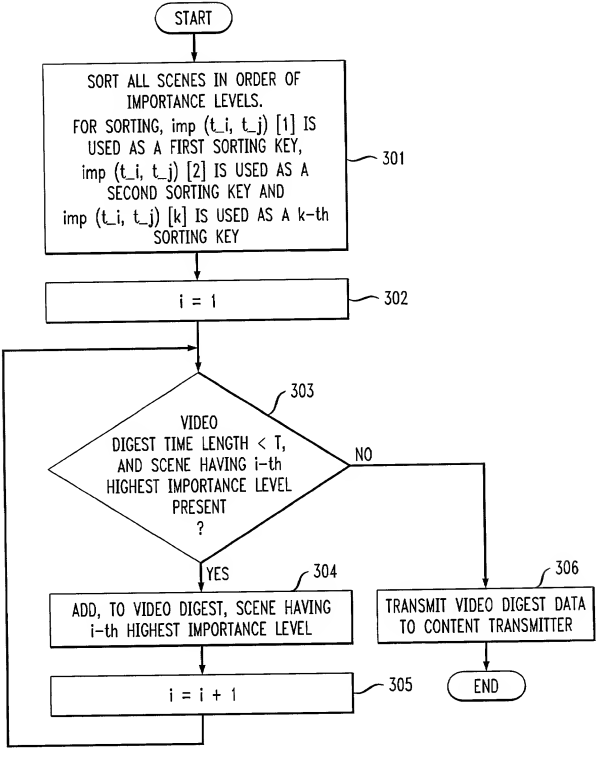


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FIG. 10

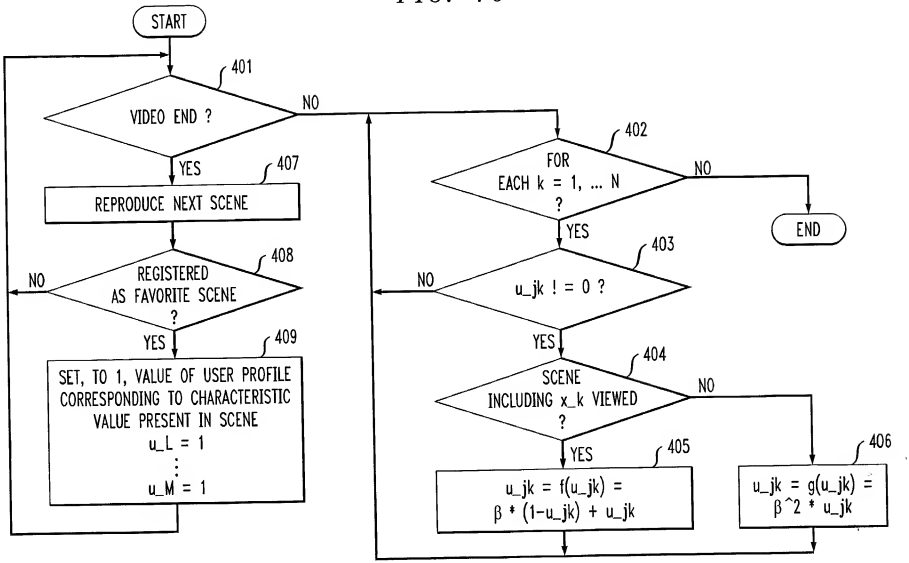
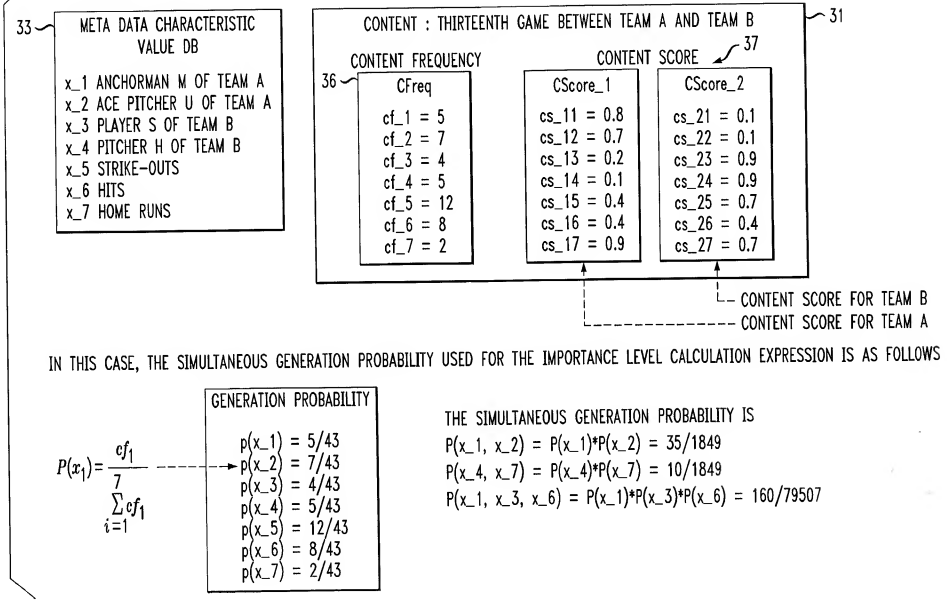

START
401
VIDEO END ?
NO
YES
407
REPRODUCE NEXT SCENE
408
REGISTERED AS FAVORITE SCENE ?
NO
YES
409
SET, TO 1, VALUE OF USER PROFILE CORRESPONDING TO CHARACTERISTIC VALUE PRESENT IN SCENE
u_L = 1
u_M = 1
402
FOR EACH k = 1, ... N ?
NO
END
YES
403
u_jk ! = 0 ?
NO
YES
404
SCENE INCLUDING x_k VIEWED ?
NO
YES
405
u_jk = f(u_jk) = β * (1-u_jk) + u_jk
406
u_jk = g(u_jk) = β^2 * u_jk

FIG. 11



IN THIS CASE, THE SIMULTANEOUS GENERATION PROBABILITY USED FOR THE IMPORTANCE LEVEL CALCULATION EXPRESSION IS AS FOLLOWS

$$P(x_1) = \frac{cf_1}{\sum_{i=1}^{7} cf_1}$$

GENERATION PROBABILITY

p(x_1) = 5/43
p(x_2) = 7/43
p(x_3) = 4/43
p(x_4) = 5/43
p(x_5) = 12/43
p(x_6) = 8/43
p(x_7) = 2/43

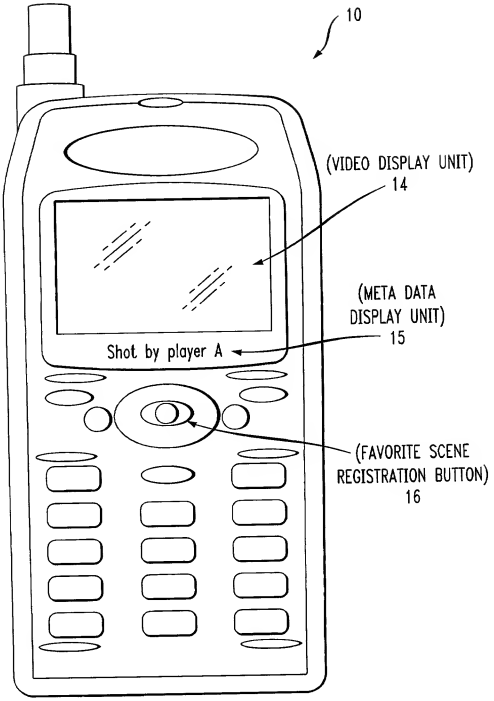
THE SIMULTANEOUS GENERATION PROBABILITY IS

P(x_1, x_2) = P(x_1)*P(x_2) = 35/1849

P(x_4, x_7) = P(x_4)*P(x_7) = 10/1849

P(x_1, x_3, x_6) = P(x_1)*P(x_3)*P(x_6) = 160/79507

FIG. 12



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